April 13, 1964

Dr. E. Cuyler Hammond
Statistical Research Section
Medical Affairs Department
American Cancer Society
New York, New York

Dear Dr. Hammond:

Your report on the prospective study (Am. J. Pub. Health, 1/64) of which you were kind enough to send me a copy, leads me to make the following proposal:

Human genetics is turning from its erstwhile emphasis on the analysis of rare one-gene syndrones to the evolutionary drives that maintain genetic predispositions to common diseases. But we have almost no information on differential fertility in relation to disease. Can such a study be integrated into your present one, in whole or in part - or has thia already been considered? The additional information that should be obtained from each principal respondent is (1) his (or her) fertility so far achieved, add (2) the kindred in which the respondent was born. If, besides total family size, the respondent could be asked how many younger sisters, younger brothers, older sisters, and older brothers, the data would be invaluable for a study of the influence of <u>birth rank</u>, in which we are very much interested at the present time. There is some reason to believe that this is an important variable in human development, e.g., see Grant, Br. J. Prev. Soc. Med., 18:35, 1964, but it has been little studied. Curiously, birth rank corrected for family size is one of the few vital statistics that can have no large genetic association: siblings within a family have the same expected genotype (barring some selective effects from fetal sensitization and mutational biases from maternal age).

If you can arrange to include such detail in your data collection we would be pleased to participate in the analysis, but this is a consideration only if it could help to advance the project. (We are unusually well-equipped for statistical processing with an IBM 7090 installation on campus.)

Cordially,

Joshua Lederberg
Professor of Genetics